

ON THE LIFE-HISTORIES OF AUSTRALIAN  
COLEOPTERA.

PART II.

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This paper contains my notes and observations on beetles bred out during the season 1892-93. Nearly all my specimens, with the exception of a few obtained during a visit to Victoria, have been obtained from material collected in the neighbourhood of Sydney; among those noted in my former paper I described *Stigmodera rufipennis*, Kirby, bred from the twigs of *Acacia juniperina* from Victoria; this season I have bred a great number from the twigs of *A. discolor* in November and December from about Sydney. Among the more remarkable ones now described is another gall-producing Buprestid belonging to the genus *Paracephala* recently described by the Rev. Thos. Blackburn from specimens I sent to him. The life-history of several weevils belonging to the genus *Oxyops* is very remarkable. Their larvæ might very easily be taken for those of lepidoptera. Another *Cetonia* has been added to our list; while I have made a slight departure in this part in noting several small longicorns which I have bred from infested branches, but the larvæ of which I have been unable to determine, as very frequently one twig will contain several larvæ belonging to different species.

As before, I am indebted to the Rev. Thos. Blackburn for determining a number of my insects, and to Mr. R. T. Baker for the identification of some of their food plants.

SCOLECOBROTUS WESTWOODI, Hope, Trans. Zool. Soc. i. 1835,  
p. 109, t. 15, f. 5.

Larva pale yellow, cylindrical, with broad head, small conical legs, and a slight fringe of reddish hairs round the head and

margins of segments ; mouth parts and jaws black, head rounded in front, broad behind, base of forehead with a broad ferruginous band extending backwards round the sides, a short furrow in centre, with a deeper furrow on either side, the summit broad, projecting, bluish-white, finely transversely striated ; thoracic segments wide but short, the last with warty markings on the upper sides, first six abdominal segments deeply and widely constricted, the summit with a depression in centre surmounted on either side with an oval warty excrescence ; 7th short, cylindrical, smooth ; 8th twice as long as 7th ; anal segment small, conical, depressed at the tip, with five short stout spines on the upper side forming a triangle pointing downwards ; corresponding warty patches on the underside of segments.

The larva feeds upon the stems of *Eucalyptus corymbosa*, attacking them about a foot above the ground ; it bores upward, hollowing out the branches ; it then turns downward and gnaws right round the top of the stem where it first entered, thus killing the branch. It is a common sight on the sandhills in the neighbourhood of Botany, about August and September, to see a dead bush standing out in every patch of this Eucalypt, and which when pulled readily snaps off short at the gnawed ring. The larva feeds downwards towards the roots just before pupating, and will generally be found in the stem a few inches above the ground when in the pupal stage.

The beetle is 16 lines in length, of a rich reddish-brown colour ; the head long and slender ; thorax long, cylindrical, finely and deeply striated with transverse corrugations, but covered with fine pale buff hairs almost obscuring them ; the whole of the elytra, legs and underside covered with a fine close pale buff pubescence, the fore part of elytra from the shoulders to the fore legs broad, deeply punctured with irregular coarse striæ, the edges of which are fringed with a pale buff pubescence giving it a handsome wavy pattern ; the rest of elytra densely covered with pubescence, and tapering towards the tip of the abdomen, the tips arcuate forming a double tooth on either side. It is a long slender beetle resembling *Uracanthus triangularis* in form and habits ; nor is it

easy to find any difference between the larvæ of these beetles, both having the same constricted segments, and spines on the anal segment.

This beetle is not common in the bush, and is generally found upon *Leptospermum* in November.

Since breeding them from Botany, I have also bred them from some stems of the Whipstick-scrub gum (*Eucalyptus gracilis*), infested branches of which I collected near Bendigo, Victoria, in August, and which I found to contain this beetle early in last March.

SYMPHYLETES SOLANDRI, Fab. Ent. Syst. Vol. i. p. 292.

Larva legless, white, short and stout; jaws black, thick, mouth parts deep reddish-brown, labrum pale yellow, thickly fringed with bright golden hairs; forehead broad, slightly punctured in centre, ferruginous at base, lightly clothed with long golden hairs, with a few scattered along the sides of abdominal segments; thoracic and abdominal segments, with the exception of the last two, with an elongate warty patch occupying the central portion of each, both on the upper and under sides, a transverse line very slightly impressed passing from behind the head and dividing each segment in the centre; anal segment smooth, shining, rounded at the tip, fringed with a few scattered hairs.

This larva attacks the flower stalks of the grass trees (*Xanthorrhœa*), feeding upon the dry woody pith, and forming straight irregular tunnels down the centre, and then gnawing round the stem close up to the outer bark about a foot above where the flower stalk springs from the stem. This causes the upper portion of the stalk to fall off, whereupon the larva, after plugging the hole, retreats downwards, forming a straight chamber down the remaining length of the stem, at the bottom of which it pupates. In the month of September, between Botany and La Perouse, I have seen the flower stalks of every grass tree on a hill side thus cut off, and found living pupæ and larvæ in most of them.

The perfect beetle appears in the latter part of October, and can be found in a favourable season feeding upon the bark of the

living flower stalks of the grass trees up to the end of December. On these they gnaw little patches, and deposit their eggs in the hole made for the next season's crop.

The beetle is 11 lines to an inch in length, dark chocolate-brown; antennæ fringed on the inner margin with short black hairs; thorax very rugose, deeply punctured, and irregularly marbled with patches of buff hairs; the femora and tibiæ and the whole of the underside mottled with fine creamy hairs, a patch of bright golden hairs on the tibiæ just above the tarsi; elytra deeply and coarsely punctured, clothed with irregular patches of fine buff and creamy hairs giving it a marbled appearance, the outer edges of elytra fringed with creamy hairs, arcuate at the extreme tip of each elytron forming a double toothed tip.

Common about Sydney in early summer.

URACANTHUS FROGGATTI, Blackburn, P.L.S.N.S.W. ix., (2), 1894, p. 106.

Larva long, slender, reddish-yellow, with very short pointed legs, and a slight fringe of scattered hairs round the head and sides of segments; mouth parts ferruginous; jaws small, black; head longer than broad, forehead excavated in centre, a slightly punctured projecting summit marked with fine parallel striæ; thoracic and first five abdominal segments deeply and broadly constricted, with a faint transverse furrow dividing each in the centre, on either side of which is an oval rugose patch; 6th abdominal segment much longer than preceding ones; 7th cylindrical, telescopic towards the 8th, the latter longer than the anal segment, which is conical at the tip.

The larva feeds upon the stems of *Lasiopetalum ferrugineum*, a low shrub common about Sydney, completely hollowing them for a considerable length, and usually cutting the branch off before pupating, and forming a chamber at the end of its burrow.

Larvæ were obtained, well grown, in infested twigs, in August, at Rose Bay, and in the following April I found the beetles emerging; previously I had never found this fine longicorn.

The beetle is 9 lines in length, light brown, covered with grey pubescence, with a long slender head and antennæ; thorax long, cylindrical, the anterior portion with irregular transverse corrugations, the posterior portion smooth; legs long, pubescent, thighs swollen; elytra long, slender, very finely ribbed, truncate at tips, the pubescence at the extremity forming a white fringe, with a fine tooth on either side, the basal portion chocolate-brown, with a shining square patch below each shoulder, the rest of elytra lightly covered with grey pubescence, densest on the sides, with a row of irregular bare spots along the outer margins.

I have never taken this beetle at large, but have bred a number of them; they doubtless live on the twigs of the shrub in their perfect state.

BETHELIUM SIGNIFERUM, Newman, Entomologist, 1840, p. 10.

Several specimens of this longicorn were bred from twigs taken from a dead tree of *Acacia decurrens* at Carlingford, all the branches of which were swarming with beetle larvæ. The earliest to appear bred out towards the end of October, and the last in the middle of November.

It is 3 lines long, reddish-brown in colour, eyes very prominent, head broad in front, the thorax rounded behind, the legs long, the apical portion of femora swollen and thickened into an oval lump; the elytra reddish-brown, mottled with dull yellow, giving it a zig-zag pattern, and covered with scattered yellow hairs.

NEISSA INCONSPICUA, Pascoe, Journ. Linn. Soc. Vol. ix. 1866, p. 82, t. 3, f. 6.

A number of specimens of this pretty little longicorn came out of twigs of *Acacia longifolia*, collected at Rose Bay; the first was found in the breeding box on the 10th of July, but the bulk of them appeared towards the end of October and early in November.

This is one of our smallest longicorns, being only 2 lines long, of a chocolate-brown colour, with the antennæ stout and hairy, the base of each joint paler than the apex; a grey silvery line down

the centre of the thorax, and a broad shield-like patch of a similar colour from the shoulders down to the centre of the elytra, giving it a handsome marbled appearance.

LYGESIS MENDICA, Pascoe, Ann. Mag. Nat. Hist. (4) 1875, Vol. xv. p. 62.

A good number of specimens of this longicorn were bred from infested twigs taken from a dead tree of *Acacia decurrens* at Carlingford; the first appeared about the end of August, others following until the middle of November. The larva feeds upon the young branchlets.

The beetle is  $5\frac{1}{2}$  lines long, of a uniform reddish-brown, jaws long and curved, head slender, thorax long and cylindrical, elytra shining, rounded at the tip, the whole insect covered with a coat of stout white hairs.

STEPHANOPS NASUTA, Newman, Entomological Mag. Vol. v. p. 510.

This is a very long slender longicorn, with the fore part of the head greatly produced, the eyes very prominent, and the antennæ light reddish-brown, long and slender. It is 7 lines in length, but not much more than a line across the widest part of the shoulders; head and thorax dark ferruginous-brown, the apex rounded and cylindrical; legs reddish-brown, long and slender, the apical portion of the femora thickened; the elytra reddish-brown, covered with a fine grey pubescence, with the outer edges bare and shining, forming a narrow line round the margins.

Two specimens were bred from stems of *Acacia longifolia* obtained at Rose Bay in the end of November.

PENTACOSMIA SCOPARIA, Newman, Entomologist, 1842, p. 361.

The larva of this beetle, which feeds under the bark, is hardly noticeable in a large twig; several came out in a show-case from mounted specimens of *Acacia longifolia* some months after they had been placed therein.

The beetle is 3 lines in length, dark brown, clothed with greyish-buff pubescence; the head, thorax, elytra, and legs fringed

with fine long hairs ; the antennæ having the first joint very stout, all the joints fringed on both sides with long black hairs, the third joint being further ornamented at its apex with a little black ball composed of fine hairs.

Bred out early in October from branches obtained at Rose Bay.

SYBRA ACUTA, Pascoe, Trans. Ent. Soc. (3), Vol. iii. p. 199.

Two specimens of this beetle emerged in the middle of December from twigs of *Acacia longifolia* obtained at Rose Bay.

Length  $2\frac{1}{2}$  lines, greyish-brown, antennæ rather short and stout, head and thorax short ; elytra finely and closely punctured, produced into a sharp arcuate tooth on either side.

SYLLITUS GRAMMICUS, Newman, Ann. Mag. Nat. Hist. 1840, Vol. v. p. 21.

The larva bores narrow irregular chambers along the centre of the smaller branches of the dead wood of *Acacia decurrens*. Two specimens bred out from infested twigs in the middle of December.

The beetle is  $4\frac{1}{2}$  lines in length, very slender ; antennæ, head, legs, and thorax ferruginous-brown ; the head long, eyes very prominent ; thorax cylindrical, rather narrow at base, swelling out and slightly ribbed above the apex, which is constricted at the junction with abdomen ; elytra long, slender, of a uniform thickness, rounded at the tip, pale ferruginous-brown, with six pale white parallel ribbed lines running from the shoulders to the tips of the wing covers.

SKELTODES TETROPS, Newman, Zool. App. 1850, p. 113.

Though I have not yet been able to determine the larva of this handsome longicorn, such a number have bred out of a log in the Technological Museum, obtained by the collector (Mr. W. Bäuerlen) in the Richmond River District, that a few notes may be of interest.

For some weeks, during the months of July and August, I captured specimens nearly every morning on the roof of the timber court of the Museum. When at rest they spread their

long slender legs out, with the antennæ pointing out straight in front, looking very like a large "daddy-long-legs" (*Tipula*).

The beetle is 6 lines long, pale brown, slender, with the posterior portion of the tibiæ black and swollen out into a club; the antennæ long and slender, the first joint swollen, black in front, but brown behind, while the apical portion of all the following joints is black, becoming lighter towards the extremity, a very long truncate spine standing out from the apex of the 3rd joint; the thorax marked with a double black line in the centre, with a similar line on either side, all coming into a transverse black band behind the head; elytra deeply punctured, and marked on the sides and centre with wavy curved reddish-brown lines forming a distinct pattern. Mr. A. Lea, late of the Agricultural Department, informs me that he on one occasion found a large number of these beetles, which had evidently bred out from a single tree.

CERATOGNATHUS FROGGATTI, Blackburn, P.L.S.N.S.W. (2), Vol. ix.  
p. 94, 1894.

Larva white, shining, semi-transparent; abdomen more slender than the thorax; head round, slightly elongate, pale brownish-yellow, eye spots black, mandibles stout, 3-toothed, black; antennæ four-jointed; legs long, slender, closely covered with rather long ferruginous hairs, tarsal claws small and very pointed; dorsal side of both thoracic and abdominal segments rounded, covered with fine ferruginous spines, more plentiful on the thoracic segments, interspersed with fine hairs.

The larva lives in the bark of *Eucalyptus robusta*, the trunk of which when the trees are large is covered with a thick felty fibrous outer bark, which shelters numbers of small insects and their larvæ. It excavates oval chambers about half an inch below the outer surface, where it lies lightly curled round. At Botany I found the beetles and pupæ in these cavities early in November.

The beetle is 5 lines long, black, with the outer edges of the thorax ferruginous, the whole insect closely and finely punctured; the dorsal side of head, thorax and elytra covered with scattered



reddish-yellow scales which form a slightly ocellated pattern upon the thorax, becoming more undefined on the elytra.

In the male the jaws are large, curved inwards, broad, and toothed at the tip, with a square wing or flange on the outer side in front of the eyes.

Though this pretty little staghorn is plentiful in the bark of the Eucalypt referred to, Mr. Blackburn says it is new; I have never found it at large.

DIAPHONIA DORSALIS, Don., Insects of New Holland, t. L. f. 1.

Larva a large bluish-white grub about 19 lines in length and 6 lines in diameter, rounded on the dorsal side, with the marginal fold, and spiracles very prominent; jaws three-toothed, stout and black; the antennæ five-jointed, basal ones pale, apical ferruginous; the forehead rugose, bisected in centre forming a broad triangle towards the jaws, with an angular ferruginous patch on either side of the first thoracic segment; legs long, covered with fine reddish hairs; all the thoracic and abdominal segments transversely ridged with three deep furrows which all converge and merge into the centre of the marginal fold, anal segment obtusely rounded; the whole insect covered with fine short reddish hairs, interspersed with a few longer ones on the sides of the head and thorax.

The larvæ were very plentiful towards the end of last March under large logs between Carlingford and Eastwood; they are usually just covered with earth mould.

I kept some thirty specimens in a large tin full of damp earth, and though several formed cocoons, with one exception they were all infested with dipterous larvæ which after a time broke holes through the sides of the earthy cocoons and came out.

On the 1st December I examined the remaining cocoons and found the only perfect one contained a dead but perfect beetle.

The beetle is one of the largest Cetonias found near Sydney, and though not as common on the flowers of *Angophora cordifolia* as some of the other species, it is often found flying about in the street, or buzzing in at open windows during the summer months.

It measures 13 lines in length ; underside, legs, head, centre of thorax, a spot on either side above the eyes, the scutellum and the marginal division of the wing cases black, the rest of thorax and elytra ochreous-yellow.

PARACEPHALA CYANEIPENNIS, Blackb., Trans. Roy. Soc. S.A. Vol. xvii. pt. 1, p. 130.

Larva slender, cylindrical ; mouth-parts black, head small, thoracic segments broadest ; abdominal ones smooth, regularly rounded, tapering towards the anal segment which terminates in a small tubercle.

In a short paper communicated to this Society in July, 1892, I described three species of the genus *Ethon* whose larvæ form galls on native plants. The larva of this beetle belonging to an allied genus also has the same remarkable habit.

In June of last year I found a large number of the low shrubby bushes of *Casuarina distyla* at the head of Rose Bay with the branches covered with rounded gall-like excrescences about 7 lines in diameter and 5 lines in height. On cutting some of them open I found the larvæ placed at the base of the gall in a similar manner to those of *Ethon affine* on *Pultenea stipularis* previously described.

The beetle is 4 lines in length ; head and thorax metallic dull bronze, the latter irregularly corrugated ; elytra deep metallic green, very finely and closely rugose ; legs and all the underside dull metallic copper colour. I have never taken this beetle at large, but have cut a great number out of mature galls, dozens of galls being sometimes found upon one bush.

APATE COLLARIS, Boh.

Larva white, showing a red line on the dorsal side bisecting the lower abdominal segments ; broad and stout, with the apex of the abdomen rounded ; jaws black, rather broad at the base, palpi short, jointed, apical one large, oblong ; head small, thoracic segments broad, legs small with very slender tarsi, fringed with

long reddish hairs ; abdominal segments slightly rounded on the sides, smaller and more rounded towards the apex.

The larvæ feed upon the dead wood of various species of Eucalypts, living chiefly on the sapwood, which is completely riddled with irregular parallel channels which often cross and run into each other, and are all filled in behind as the insect moves along. When full grown it pupates in a small oval chamber at the end of its bore. The beetles as soon as they emerge bore circular shafts straight through the bark into the sapwood, laying an egg at the bottom. The bark of a large dead Eucalypt (probably *E. hæmastoma*) was covered with these little pits, out of which streams of fine dust were falling ; beneath was the sapwood containing larvæ and pupæ in all stages of development.

The perfect beetle is  $2\frac{3}{4}$  lines long ; head ferruginous, very rugose, slightly furrowed on the sides, jaws black ; thorax pale ochreous-yellow, projecting on either side of the head ; a small curved hook standing out in front above the forehead ; the frontal portion of thorax covered with short warty black spines, the apical part finely punctured, shining ; legs ferruginous ; elytra black, slightly rugose, covered with small punctures, apex truncate, sloping down to the anal tip, the elytron produced into two short spines at the apex, the tips of which are split into two fine points.

*Hab.*—Hornsby. In the log from which I obtained these beetles I found a number of long slender larvæ which appeared to be parasitic upon the beetle larvæ, but I was unable to breed them.

OXYOPS CONCRETA, Pascoe, Journ. Linn. Soc. x. 1870, p. 479.

Larva a short, stout, dull brownish-green grub, the mouth parts small, and hidden by the folds of the first thoracic segment, which is produced on the dorsal side into four stout tubercles ; the following nine segments, each forming a double fold, the first small, wedge-shaped, with a projecting point at either side, the second fold carrying a row of eight finger-like points, the four central ones longest, the last segment overlapping the anal tip ; legless, and smooth on the ventral surface. The larva exudes a slimy secretion, with which it is covered on the upper surface,

while its excreta are drawn all over it by the aid of the slime, and the contraction and expansion of its prickly back; on the leaves it looks like a slimy slug covered with dirt.

It feeds upon the leaves of *Eucalyptus longifolia*, only eating the outer surface, and often completely skeletonising each leaf; it is plentiful about the neighbourhood of Flemington and Rookwood, where in January it is common, and many trees may be noticed with a patch of leaves, white or mottled, that have been attacked by these grubs.

When full grown it crawls down to the earth and buries itself some inches under the soil, where it remains from two and a half to three months before it emerges and re-ascends the tree, on the twigs of which it is to be found clinging later in the year.

The beetle is 6 lines long and 3 lines in width across the shoulders; black and shining, the thorax furcate, covered with fine white or brownish scales in the furrows; legs covered with similar greyish scales, while the elytra which are also distinctly ribbed are granulated with scattered greyish scales which form a round grey patch on the apical portion of the elytra.

OXYOPS HOPEI, Bohem., Schh. Gen. Curc. iii. p. 483.

The larva of this species is similar in form and habits to that of *O. concreta* previously described, but seems to gnaw the leaves in a more patchy manner.

It is common in the neighbourhood of Bendigo, Victoria, feeding upon the leaves of the ironbark, *Eucalyptus leucoxydon*. I obtained a number of the larvæ and several perfect beetles in the latter part of August.

The beetle is about the same size as *O. concreta*; black and shining, the thorax much more rugose, with the elytra more closely ribbed; a row of four rounded tubercles on the shoulder, and two pairs, one above the other towards the apex; the extremity of the elytra at their junction produced into a conical point; the whole of the insect granulate, with scattered reddish-brown scales, densest on the thorax and shoulders.

ORTHORRHINUS KLUGI, Bohem., Schh. Gen. Curc. iii. p. 246.

Larva semitransparent, with a brownish tinge; covered with a few scattered hairs on the dorsal side, and a close growth of much longer ones on the ventral side which is rather flat; mouth parts ferruginous, jaws tipped with black, coming to a sharp point; fore part of head smooth, shining and rounded in front; the segment behind arched over the head, the rest of the thoracic and all the abdominal segments rounded, smooth, shining, of a uniform size; anal segment hairy and rather truncate; larva nearly always curved round and broadest in the centre.

The larva feeds upon the dead branches of *Acacia decurrens*, hollowing out the slender twigs, but filling up the irregular tunnels as it feeds along. I obtained a large number of infested twigs from a dead *Acacia* near Carlingford containing numbers of perfect insects, and larvæ in all stages of development, in the middle of March. The pupa is of a pale brown colour with black eyes, a small protuberance on either side of the head, and a sharp spine on either side of the anal segment.

The perfect beetle is  $3\frac{1}{2}$  lines long; rich reddish-brown, covered with very fine golden bronzy scales which show a faint metallic lustre; two conical projections on the front of the thorax, and a double row of three more rounded protuberances down the elytra with two other pairs towards the apex, and a generally rugose pitted surface on the thorax and elytra, giving it a very warty appearance.